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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/881,825	06/18/2001	Noriyuki Miyamoto	209822US2S	7751
22850	7590	06/29/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.			DONG, DALEI	
1940 DUKE STREET			ART UNIT	
ALEXANDRIA, VA 22314			PAPER NUMBER	
			2879	

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/881,825

Applicant(s)

MIYAMOTO ET AL.

Examiner

Dalei Dong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-2 and 4-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 4-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/18/2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2 and 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,031,326 to Suzuki in view of U.S. Patent No. 5,677,590 to Matsuda.

Regarding to claims 1-2 and 4-10, Suzuki discloses in Figure 4, "the electron gun has a plurality of electrodes including a cathode, a control electrode, an accelerating electrode, a first anode, a focus electrode and a second anode, and these elements are arranged at predetermined intervals in the tube axial direction. Electrode supports, provided one to each electrode, are embedded in insulating supports to fix them together" (column 8, lines 44-50).

Suzuki also discloses in Figure 4, "the focus electrode is made cylindrical in shape and extends in the tube axial direction, having three different diameters respectively provided at a cathode side portion, an intermediate portion and a panel side portion. The panel side portion of the focus electrode is inserted into the second anode to constitute the main lens section." (column 8, lines 51-56).

Suzuki further discloses in Figure 4, "the focus electrode 4 is divided into a first focus electrode 401 on the anode side and a second focus electrode 402 on the cathode

side, forming a gap VM at the cathode side portion 4b. The first focus electrode 401 is provided with steps at two locations and an electrode support at the intermediate portion where the electron lens is not provided. 4b1 denotes a cathode side portion of the first focus electrode 401" (column 8, lines 57-64).

Suzuki further yet discloses in Figure 4, "the first focus electrode 401 is fabricated by drawing as a single electrode component having the panel side portion 4a, the cathode side portion 4b1 and the intermediate portion 4c. The second focus electrode 402 is fabricated as a single cylindrical electrode component. The focus electrode 4 is fabricated by placing the opening end of the cathode side portion 4b1 of the first focus electrode 401 and an opening end of the second focus electrode 402 in such a way as to be opposed to each other and then electrically connecting them by means of a connecting member 42" (column 8, line 65 to column 9, line 7).

Suzuki furthermore discloses in Figure 4, "provision of the gap VM allows the electrode components (first focus electrode 401 and second focus electrode 402) to be shortened without changing the electrode length of the focus electrode 4, which in turn increases the strengths of the electrode components and reduces their deformation.

Arranging a velocity modulation coil on the outer surface of the neck portion near the gap VM improves the contrast, and enables the displaying of a high quality image. In FIG. 4, L1 designates the length in the tube axial direction of the panel side portion 4a of the focus electrode 4; L21 indicates the axial length of the cathode side portion 4b1 of the first focus electrode 401; L22 indicates the axial length of the second focus electrode 402; and L3 represents the axial length of the intermediate portion 4c of the first focus

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electrode 401. The panel side portion 4a and the second focus electrode 402 constitute respective electron lenses and have the lengths required to constitute such electron lenses. Because the axial length L1 of the panel side portion 4a and the axial length L21 of the cathode side portion 4b1 of the first focus electrode 401 are made shorter than the axial length L3 of the intermediate portion 4c, the distortion of both opening ends of the focus electrode can be reduced. These lengths L1, L21, L22, L3 are in the relationship $L3 > L1$ and $L3 > L21$ " (column 9, lines 8-30).

Suzuki finally discloses in Figure 10, "the electron gun using the electrodes with the gap VM, such as illustrated in FIGS. 4, 5, 6 and 9, which are installed in the neck portion of a cathode ray tube. A velocity modulation coil 90 is disposed on the outside of the neck portion at a location corresponding to the gap VM. The velocity modulation coil 90 operates to improve the contrast by changing the scan velocity of the electron beam. Among the literature disclosing such a feature is Japanese Patent Publication No. 21216/1987" (column 15, lines 17-25).

However, Suzuki does not disclose the first electrode member has a projecting portion on an end face thereof, which is to be in physical contact with the second electrode member disposed adjacent to the first electrode member. Matsuda teaches in Figure 1, "each of the flanges 1-2a is formed to have extending portions each having at its extending end a cutout portion to be fixedly buried in beading glass. As shown in FIG. 1c, projections 1d are formed on the flanges 1-2a in such a manner as to project toward the other electrode element" (column 5, lines 50-54).

Matsuda also teaches in Figure 1, "each of the cup-shaped electrode bottom portions 1-2b has projections 1e formed at its corner portion in such a manner as to project away from the other electrode element" (column 5, lines 55-58).

Matsuda further teaches in Figure 1, "it is to be noted that, in any composite electrode of the type in which two electrode elements are united together, portions in which to form the aforesaid projections are not limited to flange portions or electrode bottom portions. The projections may also be formed in any portion of opposite faces which are formed to extend in the direction normal to that in which electrodes are arrayed. In addition, although, in the electrode element shown in FIG. 1a, four projections are formed on each of the flange portion and the electrode bottom portion, at least three projections may be formed in the same plane on each of the opposite faces. Further, although in this embodiment the electrode elements of the saw shape are combined to constitute one composite electrode, various other electrode elements having different shapes, such as a cup-like shape or a planar shape, are available as such electrode elements in individual forms of combination" (column 5, line 59 to column 6, line 8).

Matsuda furthermore teaches in Figure 3, "a method of assembling the composite electrode for an electron gun according to the present invention, which composite electrode includes the electrode elements united together at the flanges. In FIG. 3, reference numeral 1 denotes a composite electrode made up of electrode elements 1-1 and 1-2, reference numeral 1-1a denotes a flange of the electrode element 1-1, reference numeral 1-2a denotes a flange of the electrode element 1-2, reference numeral 10 denotes

a spacers reference numeral 11 denotes an alignment core of assembling tools, and reference numerals 12 and 13 denote the assembling tools. The respective electrode elements 1-1 and 1-2, which constitute the composite electrode 1 which is made up of two electrode elements to serve as one electrode, have the flanges 1-1a and 1-2a formed to be buried in the beading glass. The two electrode elements 1-1 and 1-2 are fitted onto the alignment core 11 of the assembling tools 12 and 13 in a stacked manner with projections 1d formed on the flanges 1-1a and projections 1d' formed on the flanges 1-2a being opposed to each other. The projections 1d and 1d' formed on the respective flanges 1-1a and 1-2a are united together, as by laser welding, within a predetermined space restricted by the spacer 10, thus preparing the composite electrode 1. The flanges 1-1a and 1-2b together with the other electrodes are fixedly buried in the beading glass” (column 6, line 54 to column 7, line 11).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the projection member of Matsuda to join the electrode members for the cathode ray tube of Suzuki in order to provide a precision electron gun improved by the reduction of deformation of an electrode during assembly as well as good focusing performance due to the elimination of positional deviation of the electron beams.

Response to Arguments

3. Applicant's arguments filed June 1, 2004 have been fully considered but they are not persuasive.

In response to Applicant's argument that Matsuda reference does not disclose the location of the projecting portions are formed in a region other than a region corresponding to 50% of the maximum diametrical dimension, with the center of this 50% dimension being set at the center axis of the electron beam passage hole. Examiner asserts that as clearly shown in Figures 1A-1D of Matsuda reference, projecting portions 1d and 1e are formed in a region that is greater than 100% of the maximum diametrical dimension of the electron passage hole with the center of this greater than 100% dimension being set at the center axis of the electron beam passage hole. Thus, Examiner asserts that the Matsuda reference teaches the claimed invention and maintains the rejection.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (571)272-2370. The examiner can normally be reached on 8 A.M. to 5 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571)272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



D.D.

June 23, 2004



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